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AUTHORITY
AFMC ltr, 19 Feb 2002

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**PROPRIETARY INFORMATION**

(SEE WADCR 110-1)

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# **MEMORANDUM REPORT**

**U. S. AIR FORCE  
AIR MATERIEL COMMAND**

DIRECTORATE of LABORATORIES  
(Location)

TECHNICAL NOTE: WCLP-53-34

SUBJECT: Fuel Booster Pump

DATE: 6 February 1953

TECHNICAL NOTE WCLP 58-34

FUEL BOOSTER PUMP

This report is not to be used in whole or in part  
for publicity, advertising or sales promotion.

Lt P. G. Schloemer  
Power Plant Laboratory

6 February 1958

RDO No. 524-867-C

Wright Air Development Center  
Air Research and Development Command  
United States Air Force  
Wright-Patterson Air Force Base, Ohio

Technical Note  
WOLP 53-34  
6 February 1953

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

The information furnished herewith is made available for study upon the understanding that the Government's proprietary interests in and relating thereto shall not be impaired. It is desired that the Judge Advocate Office, WCJ, Wright Air Development Center, Wright-Patterson Air Force Base, Ohio, be promptly notified of any apparent conflict between the Government's proprietary interests and those of others.

Wright Air Development Center  
Air Research and Development Command  
United States Air Force  
Wright-Patterson Air Force Base, Ohio

WCLPIS/PGS/1sj  
(Page 1 of 2)

Technical Note  
WCLP 53-34  
6 February 1953

Power Plant Laboratory  
Directorate of Laboratories  
R-524-867C

FUEL BOOSTER PUMP

I. PURPOSE:

1. To summarize the work accomplished under subproject R-524-867-C which covers the development of tank mounted fuel booster pumps necessary to supply vapor free fuel to the inlet of the engine high pressure pumps.

II. FACTUAL DATA:

2. This project was initiated for the purpose of developing tank mounted fuel booster pumps to meet the high performance requirements of USAF aircraft.

3. Under this subproject the Power Plant Laboratory initiated two development contracts with industry.

4. On 31 May 1951 contract AF 33(038)26109 was awarded to the Pesco Products Division, Borg-Warner Corporation for the development of a high altitude fuel booster pump capable of higher performance and yet physically smaller than any comparable fuel booster pump commercially available. This item was originally intended to replace the center wing tank pump on the B-50 aircraft where a short life problem was being encountered. Operating personnel found it advisable to operate the two speed center wing tank pump on continuous high speed duty which materially shortened pump life. The development pump is expected to correct this problem because it is capable of continuous operation at higher flows and pressures. At the present time in addition to the B-50 installation this unit is being proposed for installation in the F-86D and F-86H aircraft. The contractor has built and tested the development pump and has submitted the test results in Pesco Engineering Report No. 2212 dated 16 September 1952.

5. Contract AF 33(038)8998 was awarded to the Nash Engineering Company on 20 October 1949 for the development of a high flow, high rate of climb, low silhouette fuel booster pump. In addition to its high performance characteristics this unit incorporates the low silhouette feature without the complexity of a bevel gear drive and its lubrication system. The delivery date on this contract was delayed several times and therefore it was terminated for the convenience of the Government. During the testing phase of this contract the contractor encountered numerous difficulties with the electric motors, however sufficient testing was completed to indicate that the design objectives could be attained by the expenditure of some additional development work. The contractor has submitted the results of the tests conducted under this contract in Nash Engineering Company Report No. BR-20-8 dated 20 October 1952.

Technical Note  
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III. CONCLUSIONS:

6. It is concluded from the test data submitted in Pesco Engineering Report No. 2212 that the objectives of Contract AF 33(038)26109 have been attained.

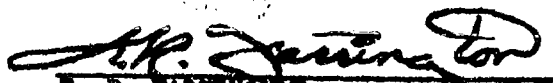
7. It is concluded from the test data submitted in Nash Engineering Company Report No. ER-20-8 that the objectives of contract AF 33(038)8998 are feasible and could be attained should the need arise for this item.

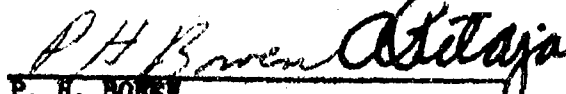
IV. RECOMMENDATIONS:

8. It is recommended that the Pesco fuel booster pump developed under contract AF 33(038)26109 be proposed for installation in the B-50 aircraft. The advisability of installing this pump in the B-50 aircraft will be considered by the Project Office in light of present service difficulties and future expected use of the B-50 aircraft.

9. It is recommended that the Pesco pump be installed in the F86D and F86H aircraft.

COORDINATION:


  
T. R. FARRINGTON  
Chief, Fuel Systems Unit, WCLPI3

  
P. H. BOWEN  
Chief, Fuel Systems & Tank Section,  
WCLPI-3

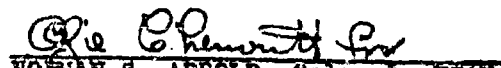
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APPROVED BY:

  
NORMAN C. APPOLD, Colonel, USAF  
Chief, Power Plant Laboratory  
Directorate of Laboratories



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DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR FORCE MATERIEL COMMAND  
WRIGHT-PATTERSON AIR FORCE BASE OHIO

FEB 19 2002

MEMORANDUM FOR DTIC/OCQ (ZENA ROGERS)  
8725 JOHN J. KINGMAN ROAD, SUITE 0944  
FORT BELVOIR VA 22060-6218

FROM: AFMC CSO/SCOC  
4225 Logistics Avenue, Room S132  
Wright-Patterson AFB OH 45433-5714

SUBJECT: Technical Reports Cleared for Public Release

References: (a) HQ AFMC/PAX Memo, 26 Nov 01, Security and Policy Review,  
AFMC 01-242 (Atch 1)

→ (b) HQ AFMC/PAX Memo, 19 Dec 01, Security and Policy Review,  
AFMC 01-275 (Atch 2)

(c) HQ AFMC/PAX Memo, 17 Jan 02, Security and Policy Review,  
AFMC 02-005 (Atch 3)

1. Technical reports submitted in the attached references listed above are cleared for public release in accordance with AFI 35-101, 26 Jul 01, *Public Affairs Policies and Procedures*, Chapter 15 (Cases AFMC 01-242, AFMC 01-275, & AFMC 02-005).

2. Please direct further questions to Lezora U. Nobles, AFMC CSO/SCOC, DSN 787-8583.

LEZORA U. NOBLES  
AFMC STINFO Assistant  
Directorate of Communications and Information

Attachments:

1. HQ AFMC/PAX Memo, 26 Nov 01
2. HQ AFMC/PAX Memo, 19 Dec 01
3. HQ AFMC/PAX Memo, 17 Jan 02

cc:  
HQ AFMC/HO (Dr. William Elliott)



# DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR FORCE MATERIEL COMMAND  
WRIGHT-PATTERSON AIR FORCE BASE OHIO

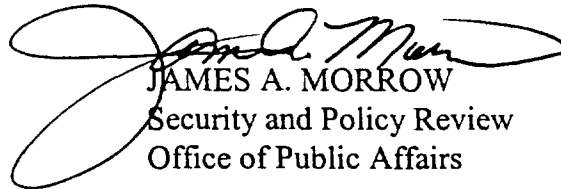
DEC 19 2001

MEMORANDUM FOR HQ AFMC/HO

FROM: HQ AFMC/PAX

SUBJECT: Security and Policy Review, AFMC 01-275

1. The reports listed in your attached letter were submitted for security and policy review IAW AFI 35-101, Chapter 15. They have been cleared for public release.
2. If you have any questions, please call me at 77828. Thanks.

  
JAMES A. MORROW  
Security and Policy Review  
Office of Public Affairs

Attachment:  
Your Ltr 18 November 2001

18 December 2001

MEMORANDUM FOR: HQ AFMC/PAX  
Attn: Jim Morrow

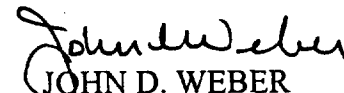
FROM: HQ AFMC/HO

SUBJECT: Releasability Reviews

1. Please conduct public releasability reviews for the following attached Defense Technical Information Center (DTIC) reports:
  - a. *Emergency Fuel Selector Valve Test on the J47-GE-27 Engine as Installed on F-86F Aircraft*, January 1955; DTIC No. AD- 056 013.
  - b. *Phase II Performance and Serviceability Tests of the F-86F Airplane USAF No. 51-13506 with Pre-Turbine Modifications*, June 1954; DTIC No. AD- 037 710.
  - c. *J-47 Jet Engine Compressor Failures*, 7 April 1952; DTIC No. AD- 039 818.
  - d. *Evaluation of Aircraft Armament Installation (F-86F with 206 RK Guns) Project Gun-Val*, February 1955; DTIC No. AD- 056 763.
  - e. *A Study of Serviced-Imposed Maneuvers of Four Jet Fighter Airplanes in Relation to Their Handling Qualities and Calculated Dynamic Characteristics*, 15 August 1955; DTIC No. AD- 068 899.
  - f. *Fuel Booster Pump*, 6 February 1953; DTIC No. AD- 007 226.
  - g. *Flight Investigation of Stability Fix for F-86F Aircraft*, 8 September 1953; DTIC No. AD- 032 259.
  - h. *Investigation of Engine Operational Deficiencies in the F-86F Airplane*, June 1953; DTIC No. AD- 015 749.
  - i. *Operational Suitability Test of the T-160 20mm Gun Installation in F-86F-2 Aircraft*, 29 April 1954; DTIC No. AD- 031 528.
  - j. *Engineering Evaluation of Type T 160 Gun and Installation in F 86 Aircraft*, September 1953; DTIC No. AD- 019 809.

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- k. *Airplane and Engine Responses to Abrupt Throttle Steps as Determined from Flight Tests of Eight Jet-Propelled Airplanes*, September 1959; DTIC No. AD-225 780.
- l. *Improved F-86F: Combat Developed*, 28 January 1953; DTIC No. AD- 003 153.
- m. *Flight Test Progress Report No. 19 for Week Ending February 27, 1953 for Model F-86F Airplane NAA Model No. NA-191*, 5 March 1953; DTIC No. AD-006 806.
2. These attachments have been requested by Dr. Kenneth P. Werrell, a private researcher.
3. The AFMC/HO point of contact for these reviews is Dr. William Elliott, who may be reached at extension 77476.

  
JOHN D. WEBER  
Command Historian

13 Attachments:

- a. DTIC No. AD- 056 013
- b. DTIC No. AD- 037 710
- c. DTIC No. AD- 039 818
- d. DTIC No. AD- 056 763
- e. DTIC No. AD- 068 899
- f. DTIC No. AD- 007 226
- g. DTIC No. AD- 032 259
- h. DTIC No. AD- 015 749
- i. DTIC No. AD- 031 528
- j. DTIC No. AD- 019 809
- k. DTIC No. AD- 225 780
- l. DTIC No. AD- 003 153
- m. DTIC No. AD- 006 806